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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/537,809

06/07/2005

Daping Chu

124144

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25944 7590 01/07/2009

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EXAMINER

TRAN, MINH LOAN

ART UNIT

PAPER NUMBER

2826

MAIL DATE

DELIVERY MODE

01/07/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/537,809	<b>Applicant(s)</b> CHU, DAPING	
	<b>Examiner</b> Minh-Loan T. Tran	<b>Art Unit</b> 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/23/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed on 10/23/2008 has been considered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 18-24, as newly added, are rejected under 35 U.S.C. 102(b) as being anticipated by Reedy et al. (GB 2-363,905).

With regard to claim 18, figures 1 and 2 of Reedy et al. disclose a semiconductor device comprising a substrate (20, 30) having a channel region 122, a first and a second p-type doped regions 80, a first and a second n-type doped regions 70; the channel region 122 being positioned between the first and second p-type doped regions 80 and between the first and second n-type doped regions 70; a gate electrode 40 overlapping the channel region 122; and a gate insulating layer 24 between the channel region 122 and the gate electrode 40.

With regard to claim 19, figures 1 and 2 of Reedy et al. disclose the first and second p-type doped region 80 and the channel 122 forming a –type transistor, and the

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first and second n-type doped regions 70 and the channel 122 forming an n-type transistor.

With regard to claim 20, figures 1 and 2 and lines 3-5 on page 21 of Reedy et al. disclose the substrate (20, 30) further having a first lightly doped region 50 that is being positioned between the first p-type doped region 80 and the channel 122. Note that figure 2 is cross section through the n-channel device 70, but the p-channel device 80 has the same structure, except for the N+ region 70 would be P+ region 80. See lines 9-13 on page 21 of Reedy et al. (WO 00/60665).

With regard to claim 21, figures 1 and 2 and lines 3-5 on page 21 of Reedy et al. disclose the substrate (20, 30) further having a second lightly doped region 50 that is being positioned between the first n-type doped region 70 and the channel 122.

With regard to claim 22, figures 1 and 2 and lines 3-5 on page 21 of Reedy et al. disclose the substrate (20, 30) further having a third lightly doped region 50 that is being positioned between the second p-type doped region 80 and the channel 122; and the fourth lightly doped region 50 being positioned between the second n-type doped region 70 and the channel region 122.

With regard to claims 23 and 24, figures 1 and 2 of Reedy et al. disclose a thickness of the substrate (20, 30) being greater than a depth of the first n-type doped region 70 or the first p-type doped region 80.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reedy et al. (GB 2-363,905) in view of Takagi (JP 53-149,770).

Figures 1 and 2 of Reedy et al. disclose all the subject matter claimed except for a channel length of the channel region in a direction between the first and second p-type doped regions being three times greater than a channel width of the channel region between the first and second n-type doped regions. However, figure 1a - 1c of Takagi et al. disclose a CMOS device wherein a channel length of the channel region 2 in a direction between the first and second p-type doped regions 5, 6 being greater than a channel width of the channel region 2 between the first and second n-type doped regions 3, 4. It would have been obvious to one of ordinary skill in the art to form the CMOS transistors of Reedy et al. having a channel length of the channel region in a direction between the first and second p-type doped regions being greater than a channel width of the channel region between the first and second n-type doped regions such as taught by Takagi in order to enhance the carriers mobility.

Further, Reedy et al. and Takagi do not disclose a channel length of the channel region in a direction between the first and second p-type doped regions being three times greater than a channel width of the channel region between the first and second n-type doped regions. However, it would have been obvious to one of ordinary skill in the art to form the channel region of Reedy et al. and Takagi's device having a channel length of the channel region in a direction between the first and second p-type doped regions being three times greater than a channel width of the channel region between the first and second n-type doped regions in order to enhance the carriers mobility, thus improving the functionality of the device.

Note that there is no evidence indicating the ranges of the length of the channel region between the p-type doped regions is critical and it has been held that it is not inventive to discover the optimum or workable range of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05. Note that the specification contains no disclosure of either the critical nature of the claimed dimensions of any unexpected results arising there from. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicants must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

### ***Response to Arguments***

4. Applicant's arguments filed 09/29/2008 have been fully considered but they are not persuasive.

It is argued, at page 6 of the remarks, that “Reedy does not teach a substrate having a channel region, a first p-type doped region, a second p-type doped region, a first n-type doped region and a second n-type doped region, as recited in Applicant’s claim 18.” However, figures 1 and 2 of Reedy do disclose a substrate (20, 30) having a channel region 122, a first p-type doped region 80, a second p-type doped region 80, a first n-type doped region 70 and a second n-type doped region 70. Therefore, Applicant’s claim 18 does not distinguish over the figures 1 and 2 of Reedy et al.

It is argued, at page 6 of the remarks, that “Takagi does not teach a substrate having a channel region, a first p-type doped region, a second p-type doped region, a first n-type doped region and a second n-type doped region, as recited in Applicant’s claim 18.” However, figures 1a – 1c of Takagi do disclose a substrate (comprising layer 1 and the layer formed on layer 1) having a channel region 2, a first p-type doped region 5, a second p-type doped region 6, a first n-type doped region 3 and a second n-type doped region 4. Thus, Applicant’s claim 18 does not distinguish over figures 1a-1c of Takagi.

Note that on page 2 of the Applicant’s specification, the substrate is defined as a thin film substrate material is supported on a transparent supporting material.

### ***Conclusion***

**5. THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh-Loan T. Tran whose telephone number is (571) 272-1922. The examiner can normally be reached on Monday-Friday 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue A. Purvis can be reached on (571) 272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mlt  
01/2009

/Minh-Loan T. Tran/  
Primary Examiner  
Art Unit 2826